Site Inspection Report
QualaWash
South Gate, Los Angeles County, California

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List of Acronyms

amsl	above mean sea level
AOC	analyte of concern
APN	Assessor's Parcel Number
Armstrong	Armstrong World Industries
AST	aboveground storage tank
bgs	below ground surface
Brenntag	Brenntag Pacific, Inc.
CA 2nd MCL	California Secondary Maximum Contaminant Level
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CLPAS	Contract Laboratory Program Analytical Services
CPT	Cone Penetration Testing
DCE	dichloroethylene
DP	direct push
DTSC	Department of Toxic Substances Control
ELA	East Los Angeles
EPA	United States Environmental Protection Agency
Fed MCL	Federal Maximum Contaminant Level
ft	foot
ft^2	square-foot
GSWC	Golden State Water Company
HHMD	LA County Fire Department, Health Hazardous Materials Division
HRS	Hazard Ranking System
HWSA	hazardous waste storage area
MCL	Maximum Contaminant Level
MDL	method detection limit
MEK	methyl ethyl ketone
MWC	Mutual Water Company
NE710	North East 710 Study Area
NPL	National Priorities List
PA	Preliminary Assessment
PCE	tetrachloroethylene
PVF	pipes/valves/fittings
PWC	Park Water Company
QC	Quality Control
QSI	Quala Systems, Inc.
Quality	Quality Distribution, Inc.
RCRIS	Resource Conservation and Recovery Information System
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SEMS	Superfund Enterprise Management System

List of Acronyms (Continued)

SEP	soil exposure pathway
SI	Site Inspection
SQL	sample quantitation limit
SSL	soil screening level
TCE	trichloroethylene
TDL	target distance limit
TRI	Toxics Release Inventory
UST	underground storage tank
VOC	volatile organic compound
WESTON®	Weston Solutions, Inc.
Winsome	Winsome Enterprises, Inc.
µg/L	microgram per liter

EXECUTIVE SUMMARY

The QualaWash site is officially located at 8332 Wilcox Ave., South Gate, Los Angeles County, California. Multiple additional addresses are associated with the site. The 5-acre site is located in a mixed urban industrial and residential area. The site is bordered to the north by approximately nine residential properties.

The site has been used for tank trailer hauling and washing activities since at least 1986, and for unspecified semitrailer activities since at least 1972. The site is currently operated by two distinct entities, Winsome (doing business as Quality Carriers, a subsidiary of Quality Distribution) and Quala (formerly QualaWash). Prior to 2009, Quala was also a subsidiary of Quality Distribution.

Quality Carriers maintains an office at the northeastern portion of the site and a semitrailer truck maintenance facility at the northwestern portion of the site. Quala operations primarily occur at the central portion of the site and include tank trailer and chemical tote washing activities that typically operate 24 hours a day, seven days a week. In addition, both entities use the property for semitrailer truck and trailer parking. The Quala operational area includes four aboveground storage tanks (ASTs), which were reportedly used to store wash fluids; a hazardous waste storage area (HWSA); a tank trailer wash bay, which includes a subgrade clarifier; and a chemical tote washing area. In addition, hundreds of chemical totes are stored throughout the site and at least one underground storage tank (UST) was formerly located on site.

The volume and type of hazardous substances stored at the site is variable and dependent on tank cleaning operations and semitrailer payloads. Based on identified hazardous waste manifests and generator reports, hazardous substances used and/or stored on the site include halogenated solvents, including tetrachloroethylene (PCE); hydrocarbon solvents; oxygenated solvents; non-halogenated solvents, including methyl ethyl ketone (MEK); and metals, including arsenic, chromium, cadmium, and mercury.

Prior to this Site Inspection (SI), no known soil vapor, soil matrix, or groundwater sampling has been conducted at the site. The U.S. Environmental Protection Agency (EPA) has had no known historical involvement with the site. No state or local regulatory agency has had any known historical involvement with the site.

In November 2015, Weston Solutions, Inc. (WESTON), on behalf of EPA, conducted the SI at the site. During the SI, WESTON collected soil matrix source samples at depths up to 15 feet (ft) below ground surface (bgs) from eight on-site borings, collected groundwater release samples at depths up to 116 ft bgs from three on-site borings and one off-site boring, and collected secondary objective groundwater samples from two on-site borings.

On-site soil samples collected during the SI did not exhibit concentrations of metals or VOCs that exceeded the site-specific action levels. Groundwater release samples collected during the SI exhibited elevated concentrations of metals. Arsenic was identified at concentrations up to 16 micrograms per liter (µg/L). The federal Maximum Contaminant Level (MCL) for arsenic is 10 µg/L.

The results of this SI did not identify any significant hazardous substance source areas at the site. Furthermore, the data suggest that it is unlikely that current or historical on-site operations have significantly impacted shallow groundwater beneath the site.

1.0 INTRODUCTION

1.1 Regulatory Background

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Weston Solutions, Inc. (WESTON®) has been tasked to conduct a Site Inspection (SI) of the QualaWash site in South Gate, Los Angeles County, California.

The QualaWash site was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Public Access Database on October 1, 2013 (CAN000909573). CERCLIS has since been retired and its data transitioned into the Superfund Enterprise Management System (SEMS). The site was formerly known as Univar USA. A Preliminary Assessment (PA) was completed for the U.S. Environmental Protection Agency (EPA) by WESTON on September 4, 2014. The purpose of a PA is to review existing information on a site with potential releases of a hazardous substance and its environs to assess the threats, if any, posed to public health, welfare, or the environment and to determine if further investigation under CERCLA is warranted. Prior to the 2014 WESTON PA, EPA completed a Site Screening in June 2013 (DTSC, 2013; EPA, 2017a; Weston, 2014).

After reviewing the 2014 PA, EPA decided that further investigation of the QualaWash site would be necessary to more completely evaluate the site using the EPA Hazard Ranking System (HRS) criteria. The HRS assesses the relative threat associated with actual or potential releases of hazardous substances at the site. The HRS has been adopted by EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL identifies sites at which EPA may conduct remedial response actions. This report summarizes the results of the SI for the QualaWash site (EPA, 2014).

More information about the Superfund program is available on the EPA website at http://www.epa.gov/superfund.

1.2 Apparent Problem

EPA determined that a Site Inspection (SI) was needed at the QualaWash site because of the following apparent problems:

- The site has been used for tank trailer hauling and washing activities since at least 1986, and for unspecified semitrailer activities since at least 1972 (HA, 2014; Weston, 2014).

- Hazardous substances documented as having been used and/or stored on the site include, but are not limited to, halogenated solvents, including tetrachloroethylene (PCE); hydrocarbon solvents; oxygenated solvents; non-halogenated solvents, including methyl ethyl ketone (MEK); and metals, including arsenic, chromium, cadmium, and mercury. (DTSC, 2017b; Weston, 2014).

- The site is located within the North East 710 Study Area (NE710). Drinking water wells in the NE710 have historically been impacted by elevated levels of metals and volatile organic compounds (VOCs). The area is under investigation in order to identify the primary sources of this contamination and facilitate further investigation and remediation at those sources under the auspices of either EPA or the State of California. The site is located approximately 200 feet (ft) west of the Golden State Water Company (GSWC) - Bell/Bell Gardens system's Hoffman Well 02, which was closed in 2000 and historically reported elevated concentrations of chromium, PCE, and trichloroethylene (TCE) (Google, 2017; RWQCB, 2015; Weston, 2016).

- No known soil gas, soil matrix, or groundwater sampling has been conducted at the site.

2.0 SITE DESCRIPTION

2.1 Location *(See Figure 1)*

The QualaWash site is located at 8332 Wilcox Ave., South Gate, California. Additional addresses associated with the site include 5000, 5032, and 5042 Cecelia St. The geographic coordinates for the site are 33° 57' 25.6" North latitude and 118° 10' 43.9" West longitude (Appendix A). The location of the site is shown in Figure 1.

2.2 Site Description *(See Figures 2 & 3)*

The QualaWash site occupies approximately 5 acres in a mixed industrial and residential area at the northeastern portion of the city of South Gate, immediately adjacent to the city of Cudahy. The site is comprised of three Los Angeles County Assessor parcels, which are identified by Assessor Parcel Numbers (APNs) 6224-032-011, 6224-032-017, and 6224-032-018. A parcel layout map is presented in Figure 2 (Google, 2017; LACA, 2017; Appendix B).

The site is bordered to the north, across Cecelia Street, by approximately nine single- and multi-family residential properties. The site is bordered to the east by a textile manufacturing facility (Orijean Corporation) and to the southeast by the Armstrong World Industries (Armstrong) resilient floor manufacturing facility (EPA ID No. CAN000909482). The site is bordered to the south by a pipes/valves/fittings (PVF) products distribution warehouse (Val-Fit) and to the west, across Wilcox Avenue, by an aluminum manufacturing and processing facility (Consolidated Precision Products) (Google, 2017; Weston, 2017; Appendix B).

As of October 2016, the site was occupied by five primary structures. The approximately 7,700 square-foot (ft^2)-Quality Carriers office building was located at the northeastern corner of the site and the approximately 4,000 ft^2-Quality Carriers maintenance shop was located at the northwest corner of the site. The Quala complex was located at the southwestern and south-central portions of the site and included the approximately 1,700 ft^2-Quala office building to the west, the approximately 6,300 ft^2 Quala operations building at the center, and the approximately 6,600 ft^2-Quala tanker wash bays to the east. A covered tote washing area was located immediately to the northeast of the wash bays and a covered hazardous waste storage area (HWSA) was located south-adjacent to the eastern portion of the Quala operations building. A site layout map is presented in Figure 3 (Google, 2017; Weston, 2014; Appendix B).

With the exception of a lawn and small parking lot located adjacent to the Quala Office building, the entirety of the site was enclosed behind a chain-link fence. Vehicle access to the site was through one of four gates. Two of the entrances were located on Wilcox Avenue, one was located on Cecelia Street and primarily served Quality Carrier employees, and one was located at the southeastern corner of the site and connected to Patata Street. With the exception of a few minor landscaped areas, the entirety of the surface of the site was covered with asphalt or concrete. Four large aboveground storage tanks (ASTs) were located north-adjacent to the Quala operations building and hundreds of plastic chemical totes were stored throughout the site, primarily near the Quala complex. In addition, at least one underground storage tank (UST) was formerly located at

the site, although the specific location of this UST is not known, and a clarifier was located within the Quala tanker wash bays (Google, 2017; RWQCB, 2017; Weston, 2014; Appendix B).

It is not known when the site was first developed. However, by 1954, it was occupied by approximately 10 single-family residential buildings at the northern and southern portions, vacant land at the southeastern portion, and an apparent commercial facility at the west-central portion. The existing Quala office and operations buildings and the Quality Carriers office building were reportedly constructed in 1955 and 1966, respectively. By 1974, only two residential buildings remained at the site, at the northwest and north-central portions. In addition, the existing Quality Carrier maintenance shop had been constructed as well as an approximately 5,000 ft^2-building that was formerly located west-adjacent to the Quality Carriers office building. By 1994, the remaining residential buildings had been replaced with semitrailer parking and the existing Quala tanker wash bays had been constructed. By 2003, the building formerly located west-adjacent to the Quality Carriers office building had been removed and the area had been converted into additional semitrailer parking (Google, 2017; HA, 2014; LACA, 2017; Weston, 2014).

2.3 Operational History

The QualaWash site is currently owned by two distinct corporate entities. The eastern parcel, APN 6224-032-011, is owned by Winsome Enterprises, Inc. (Winsome). The other two site parcels, APNs 6224-032-017 and 6224-032-018, are owned by Quala Systems, Inc. (QSI). Winsome purchased the eastern parcel from QSI in October 2015. QSI purchased Parcel 6224-032-018 in the early 1990s and the remaining parcels in the late 1990s. The site is currently operated by two distinct entities, Winsome and Quala (formerly QualaWash). Winsome is a partner affiliate of Quality Carriers, Inc., a subsidiary of Quality Distribution, Inc. (Quality). Winsome currently does business on site as Quality Carriers. Quala is an independent entity that prior to 2009 was a subsidiary of Quality doing business as QSI. In December 2013, QualaWash was rebranded as Quala (LACA, 2017; QDI, 2014; Weston, 2014; Appendix C-1).

On-site operations are primarily divided into two distinct activities that include bulk chemical transportation and maintenance services, which are conducted by Winsome (doing business as Quality Carriers), and bulk chemical tank trailer washing, which are conducted by Quala. Quality Carriers maintains an office at the northeastern portion of the site and a semitrailer truck (i.e., semi truck) maintenance facility at the northwestern portion of the site. Quala utilizes the central portion of the site for tank trailer and chemical tote washing activities that typically operate 24 hours a day, seven days a week, and service approximately 40 tank trailers per day. In addition, both entities utilize the property for semi truck and trailer parking. The site has reportedly been used for tank trailer hauling and washing activities since at least 1986. In addition, activities involving semitrailers have been conducted at the site since at least 1972; however, the specific operations associated with these earlier activities are not known (Google, 2017; HA, 2014; Weston, 2014; Appendix B).

The four large ASTs located adjacent to the Quala Operations building are reportedly used to store wash fluid for tanker cleaning operations. The volume and type of hazardous substances stored at the site is variable and dependent on tank cleaning operations and semitrailer payloads. Based on

identified hazardous waste manifests and generator reports, hazardous substances used and/or stored on the site include, but are not limited to, halogenated solvents, including PCE; hydrocarbon solvents; oxygenated solvents; non-halogenated solvents, including MEK; and metals, including arsenic, chromium, cadmium, and mercury. Specific hazardous substance storage and disposal practices are not known (DTSC, 2017b; Weston, 2014).

Unaltered petroleum products, as well as any substances that are purposefully added to the indigenous petroleum product during the refining process, are excluded from consideration under CERCLA.

2.4 Regulatory Involvement

2.4.1 U. S. Environmental Protection Agency

The QualaWash site has multiple listings in the Resource Conservation and Recovery Information System (RCRIS) database. The site is listed in the database as *QualaWash Holdings, LLC* (Handler ID: CA0000031997), a Large Quantity Generator with an address of 8332 Wilcox Ave. The site is also listed in the database as *Leaseway Bulk Services* (Handler ID: CAD009864679), a Small Quantity Generator with an address of 8332 Wilcox Ave. The site is also listed in the database as *Bulk Freightways* (Handler ID: CAD027896208), a Transporter with an address of 8332 Wilcox Ave (EPA, 2017b).

As of July 2017, the site is not listed in the Toxics Release Inventory (TRI) database (EPA, 2017c).

2.4.2 California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)

The site is listed in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) EnviroStor database as *Quality Distribution aka Univar USA* (Envirostor ID: 60001785), with an address of 5042 Cecelia St. The case is listed as an *Evaluation* site that was active as of September 29, 2015. DTSC has had no known additional involvement with the site (DTSC, 2017a).

2.4.3 California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB)

The site is listed in the California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB) GeoTracker database as *Matlack Inc* (GeoTracker ID: T0603703785; Case No.: I-11357), with an address of 8332 Wilcox Ave. The site is listed as a *LUST Cleanup Site* with a cleanup status as *Completed – Case Closed as of 2/8/1993.* The potential contaminants of concern are listed as *diesel* and the potential media of concern is listed as *soil.* RWQCB has had no known additional involvement with the site (RWQCB, 2017).

2.4.4 Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD)

Neither the Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD) nor any other local regulatory agencies have had any known involvement with the site (Weston, 2014).

3.0 INVESTIGATIVE EFFORTS

3.1 Previous Sampling

Prior to the SI sampling event, no known soil vapor, soil matrix, or groundwater sampling has been conducted at the QualaWash site.

3.2 Site Investigation (SI) Sampling *(See Figures 4 & 5; Tables 1 through 3)*

In November 2015, WESTON, on behalf of EPA, conducted the SI sampling event at the QualaWash site. The event included soil matrix source sampling, groundwater release sampling, and secondary objective groundwater sampling. The primary objective of the investigation was to document information to be used in the HRS characterization process, including additional source areas and levels of contamination in site soils and groundwater. The secondary objective of the investigation was to identify subsurface lithology and levels of contamination within various water-bearing zones, both on and near the site. This information will be utilized in the development of a more comprehensive understanding of the hydrogeologic conditions that exist within the greater NE710 Study Area as well as the subbasin as a whole.

Sampling methodology, locations, analyses, and analytical results are summarized below. The Sampling and Analysis Plan (SAP), which was approved by EPA in September 2015, is provided in Appendix F.

Based on the historical use of the site and the elevated concentrations of contaminants in nearby municipal drinking water wells, analytes of concern (AOCs) at the site were identified as: arsenic, chromium, cadmium, mercury, 2-butanone (i.e., MEK), PCE, and TCE. No additional AOCs were identified based on the results of the SI investigation.

All samples were submitted under the EPA Contract Laboratory Program to Shealy Environmental Services, Inc. for metal analysis by EPA Contract Laboratory Program Analytical Services (CLPAS) ISM02.2 or Chemtech Consulting Group for VOC analysis by EPA CLPAS SOM02.2. The data were validated by the EPA Region 9 Quality Assurance Office. The complete validated analytical results are presented in Appendix H. The sample locations are shown in Figure 4.

3.2.1 Action Levels

In accordance with the HRS, the action levels to establish an observed release to groundwater, as well as to establish an on-site source of contaminated soil, are “significantly above background” concentrations. “Significantly above background” is defined as three times the background concentration for all media. When a background concentration is not detected at or above the method detection limit (MDL), the assigned background concentration is the sample quantitation limit (SQL); “significantly above background” for this scenario is defined as a concentration at or above the SQL.

Soil matrix samples collected from Boring QWS-DP-9, which is located at the northeastern portion of the site, are designated as background soil samples for HRS purposes. The assigned background concentration for each analyte was determined by amalgamating the concentration data from each of the four discrete-depth soil samples. For any analyte with a reported MDL exceedance in the dataset, the background concentration was conservatively assigned as the arithmetic mean plus three times the standard deviation. For any analyte without an MDL exceedance, the background concentration was conservatively assigned as the maximum SQL value within the dataset. The assigned soil-matrix action levels for select metals are presented in Table 1.

Although the selected background location is situated within current and historical operational areas of the site, the exhibited concentrations were deemed to be generally consistent with published background levels for native soils in the region and appear unlikely to have been significantly impacted by hazardous substances. With the exception of acetone, which is a common laboratory contaminant, VOCs were not reported at concentrations above their respective MDLs in any of the four discrete-depth background soil samples. The September 2015 SAP (Appendix F) indicates that soil background samples for the investigation were to be collected from Boring QWS-CPT-2. However, due to logistical and scheduling constraints, this boring was relocated to directly adjacent of Boring QWS-DP-9 and it was unnecessary to collect soil matrix samples from both locations. Select discrete-depth analytical results for the assigned soil matrix background samples for metals are presented in Table 1. The complete analytical results are provided in Appendix H.

Since a hazardous substance source area was not identified during the SI investigation, it was deemed unnecessary for HRS purposes to assign a background sample location for any of the sampled aquifers. Furthermore, due to local variations and uncertainties in the groundwater flow direction within the Gaspur aquifer underlying the site, a Gaspur aquifer background (i.e., upgradient) sample location could not be determined. No samples from the perched aquifer were collected during the SI investigation. See section 4.2.1 for a description of the shallow aquifers underlying the site.

3.2.2 Source Sampling *(See Figures 4 & 5; Tables 1 & 2)*

To establish hazardous substance source areas at the site, WESTON collected subsurface soil matrix samples using direct push (DP) technology from eight selectively-biased on-site boring locations, designated as QWS-DP-1 through QWS-DP-8. Borings QWS-DP-1 and QWS-DP-6 were advanced immediately southwest and northeast, respectively, of the AST tank farm. Boring QWS-DP-2 was advanced adjacent to the HWSA. Borings QWS-DP-3 and QWS-DP-7 were advanced immediately northeast and southwest, respectively, of the Quala tanker wash bays. Borings QWS-DP-4 and QWS-DP-5 were advanced immediately north and south, respectively, of the Quality Carriers maintenance shop. Boring QWS-DP-8 was advanced within the east chemical tote storage area. Source sample locations are presented in Figure 4.

At each source sample boring location, subsurface lithology was logged to 15 ft below ground surface (bgs) and soil matrix samples were collected from depths of 2, 5, 10, and 15 ft bgs. The soil lithologies from each boring were relatively consistent with soils composed primarily of

light- to dark-brown sands through clayey sands with interbedded lenses (typically less than 2 ft) of dark-brown sandy silts through clays. Field observations and subsurface soil descriptions are provided in Appendix I.

Metal Results: *(See Figure 5; Tables 1 & 2)*

No metals were identified at concentrations at or above their corresponding action level in soil matrix samples collected during the investigation. Action levels were assigned per the methodology described in section 3.2.1. Select analytical results and assigned action levels are presented in Figure 5 and tables 1 and 2.

Volatile Organic Compound (VOC) Results:

No VOCs were identified at concentrations at or above their corresponding action level in soil matrix samples collected during the investigation. Only acetone was identified in samples at a concentration at or above its MDL; however, acetone is a common laboratory contaminant and the reported detections may not be indicative of actual conditions in the sampled medium. Since no VOC analytes, with the exception of acetone, were identified in the background soil matrix samples at concentrations exceeding their corresponding MDL, the reported SQLs of the background samples were assigned as the VOC action levels (see section 3.2.1).

3.2.3 Release Sampling *(See Figures 4 & 5; Table 3)*

To establish a release of one or more hazardous substances from on-site source areas to groundwater beneath the site, WESTON collected discrete-depth groundwater samples from the Gaspur and Exposition aquifers. See section 4.2.1 for a description of the shallow aquifers underlying the site. As part of the investigation, a total of eight groundwater samples were collected from four selectively-biased on-site locations using Direct Push (DP) and Cone Penetration Testing (CPT) technology.

For HRS purposes, no action levels are assigned for contaminants identified within the Gaspur or Exposition aquifers beneath the site (see section 3.2.1). For reporting purposes, analyte concentrations are referenced against documented federal and state regulatory benchmarks. Release sample locations are presented in Figure 4.

Two of the eight release samples were collected from on-site direct push borings, which included borings QWS-DP-2 and QWS-DP-6. Both of these samples were collected from depths consistent with the Gaspur aquifer. Boring QWS-DP-2 was advanced adjacent to the HWSA. Boring QWS-DP-6 was advanced immediately northeast of the AST tank farm. As a result of poor recovery at Boring QWS-DP-2, the sample collected from this location was submitted for VOC analysis only.

Six of the eight release samples were collected from CPT borings, which included borings QWS-CPT-4 and QWS-CPT-5. Two of the six CPT samples were collected from depths consistent with the Gaspur aquifer and four of the six samples were collected from depths consistent with the

Exposition aquifer. Boring QWS-CPT-4 was advanced off site along Wilcox Avenue, immediately southwest of the Quality Carriers maintenance shop. Boring QWS-CPT-5 was advanced at the southwestern corner of the site, approximately 250 ft downgradient (with respect to the Exposition aquifer) of the Quala tanker wash bays.

Metal Results: *(See Figure 5; Table 3)*

Metals identified at concentrations at or above their corresponding SQL in groundwater release samples collected during the investigation include arsenic, barium, copper, manganese, nickel, vanadium, and zinc. Additional metal analytes identified at concentrations below their SQL but above their MDL include antimony, cobalt, lead, and selenium.

Metals identified in the samples with exceedances of documented federal and state regulatory benchmarks include arsenic and manganese. The most elevated metal concentrations were generally identified in the samples collected from the Gaspur aquifer but were relatively consistent across the site.

The arsenic federal Maximum Contaminant Level (MCL) of 10 micrograms per liter (µg/L) was exceeded by 2 of the 7 samples with a maximum concentration of 16 µg/L. The manganese California Secondary MCL (CA 2nd MCL) of 50 µg/L was exceeded by all 7 of the samples with a maximum concentration of 322 µg/L. Select analytical results and benchmarks are presented in Figure 5 and Table 3.

Volatile Organic Compound (VOC) Results: *(See Figure 5; Table 3)*

VOCs identified at concentrations at or above their corresponding SQL in groundwater release samples collected during the investigation include acetone; cis-1,2-dichloroethylene (DCE); cyclohexane; methyl-cyclohexane; and TCE. Additional VOC analytes identified at concentrations below their SQL but above their MDL include 2-butanone; benzene; carbon disulfide; chloroform; m,p-xylene; and trans-1,2-DCE.

No VOCs were identified in the samples with exceedances of documented federal and state regulatory benchmarks. Select analytical results and benchmarks are presented in Figure 5 and Table 3.

3.2.4 Secondary Objective Groundwater Sampling and Lithological Profiling
(See Figures 4 & 5; Table 3)

In accordance with the SI's secondary objective (see section 3.2), WESTON collected lithological profiling data and discrete-depth groundwater samples from two on-site locations using CPT technology. During the investigation, two secondary objective samples were collected from the Gaspur aquifer and four secondary objective samples were collected from the Exposition aquifer. Boring QWS-CPT-1 was advanced along the eastern site boundary approximately 90 ft south of the Quality Carriers office building. Boring QWS-CPT-2 was advanced at the northeastern portion

of the site, approximately 65 ft west of the Quality Carriers office building. Secondary objective sample locations are presented in Figure 4.

Metal Results: *(See Figure 5; Table 3)*

Metals identified at concentrations at or above their corresponding SQL in secondary objective groundwater samples collected during the investigation include antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, and zinc. Additional metal analytes identified at concentrations below their SQL but above their MDL include beryllium, selenium, and silver.

Metals identified in the samples with exceedances of documented federal and state regulatory benchmarks include arsenic and manganese. The arsenic federal MCL (Fed MCL) of 10 µg/L was exceeded by 3 of the 6 samples with a maximum concentration of 27 µg/L. The manganese CA 2nd MCL of 50 µg/L was exceeded by all 6 of the samples with a maximum concentration of 380 µg/L. Select analytical results and benchmarks are presented in Figure 5 and Table 3.

Volatile Organic Compound (VOC) Results: *(See Figure 5; Table 3)*

VOCs identified at concentrations at or above their corresponding SQL in secondary objective groundwater samples collected during the investigation include cis-1,2-DCE; cyclohexane; and TCE. Additional VOC analytes identified at concentrations below their SQL but above their MDL include carbon disulfide; methylcyclohexane; styrene; and trans-1,2-DCE.

No VOCs were identified in the samples with exceedances of documented federal and state regulatory benchmarks. Select analytical results and benchmarks are presented in Figure 5 and Table 3.

3.2.5 Deviations from the SAP

Deviations from the September 2015 QualaWash SAP (Appendix F) occurred during the field work. The significant deviations approved in the field by the EPA Site Assessment Manager include:

- Only four of the proposed six CPT borings were advanced. Proposed borings QWS-CPT-3 and QWS-CPT-6 were not advanced due to scheduling constraints and utility conflicts.

- A groundwater release sample from the perched aquifer was not collected at direct push borings QWS-DP-3 and QWS-DP-8 because a water-bearing unit was not identified within the proposed sampling interval.

- CPT boring QWS-DP-2 was not advanced at the proposed location on Cecelia Street due to scheduling constraints and utility conflicts. The boring was relocated approximately 80 ft southwest to a location at the northeastern portion of the site.

- The proposed background soil matrix samples were not collected from Boring QWS-CPT-2 on Cecelia Street. Soil matrix samples collected from Boring QWS-DP-9, which was located immediately adjacent to the relocated Boring QWS-CPT-2, were designated as the background samples.

- CPT Borings QWS-CPT-1 and QWS-CPT-2 were designated in the SAP as Exposition aquifer background (i.e., upgradient) locations. However, since an on-site hazardous substance source was not identified during the investigation, it was deemed unnecessary for HRS purposes to assign aquifer background samples. The samples collected from these locations were redesignated as secondary objective samples.

- The Gaspur aquifer groundwater release sample collected from Boring QWS-DP-2 was submitted for VOC analysis only due to insufficient water for metal analysis.

- "Special Designation" samples (e.g., Laboratory Quality Control [QC], duplicates, blanks) were reassigned in the field based on actual number and location of collected samples. Final designations are presented in the Sample Nos. – CLP Nos. Correlation Tables (Appendix G).

4.0 HAZARD RANKING SYSTEM FACTORS

4.1 Sources of Contamination *(See Figure 5; Tables 1 & 2)*

For HRS purposes, a source is defined as an area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance.

Based on the results of the 2015 SI investigation and a review of available historical operational information, no significant hazardous substance sources were identified at the QualaWash site.

4.2 Groundwater Pathway

In determining a score for the groundwater migration pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to groundwater; 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and 3) the people (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on the number of people who regularly obtain their drinking water from wells that are located within 4 miles of the site. The HRS emphasizes drinking water usage over other uses of groundwater (e.g., food crop irrigation and livestock watering), because, as a screening tool, it is designed to give the greatest weight to the most direct and extensively studied exposure routes.

4.2.1 Hydrogeological Setting *(See Table 4)*

The site lies within the Central Subbasin in the Coastal Plain of the Los Angeles Groundwater Basin. The Central Subbasin is generally bound to the north by the folded, uplifted, and eroded Tertiary basement rocks of the La Brea High surface divide; to the northeast and east by the less permeable Tertiary rocks of the Elysian, Repetto, Merced, and Puente Hills; to the southeast by the Coyote Creek flood control channel (approximate Los Angeles County/Orange County boundary); and to the southwest by the Newport Inglewood Uplift, a regional anticline associated with the Newport Inglewood fault system. Geologic units typically found beneath the subbasin include Holocene-age alluvium, the upper Pleistocene Lakewood Formation, and the lower Pleistocene San Pedro Formation. The Los Angeles and San Gabriel rivers pass across the surface of the subbasin, primarily by way of engineered concrete channels, on their way to the Pacific Ocean. The average net annual precipitation in the subbasin is approximately 12 inches (DWR, 1961; DWR, 2004).

The Central Subbasin has historically been divided into four areas: the Los Angeles Forebay at the northwest, the Montebello Forebay at the north, the Whittier Area at the northeast, and the Central Basin Pressure Area at the central and southwest. However, these areal distinctions are appropriate for geographical purposes only and do not accurately represent hydrogeologic conditions within the areas. The hydrogeologic forebays, which are generally characterized by unconfined and relatively interconnected aquifer systems, are limited to small regions within the greater Forebay areas. The Montebello Forebay, as well as the Los Angeles Forebay to a lesser degree, serve as the

primary groundwater recharge areas for both shallow and deep aquifers across the entirety of the subbasin. The Central Basin Pressure Area is generally characterized by confined aquifer systems separated by relatively impermeable clay layers, although semipermeable zones within these layers allow aquifers to be interconnected in some areas. These semipermeable zones gradually decrease in frequency and magnitude with increasing distance from the forebays (DWR, 1961; DWR, 2004).

The site is located within the northern portion of the Central Basin Pressure Area geographical area, with the Los Angeles Forebay to the northwest and the Montebello Forebay to the northeast. Groundwater beneath the site is typically found within the coarser-grained sediments of the Holocene alluvium (Gaspur aquifer), the upper Pleistocene Lakewood Formation (Exposition and Gage aquifers), and the lower Pleistocene San Pedro Formation (Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers). The estimated elevations and depths of the aquifers underlying the site are presented in Table 4. Irregular patches of a perched, or semiperched, aquifer are also present within the Holocene alluvium throughout much of the subbasin. Although significant amounts of water can be found within these perched water-bearing zones, they are often discontinuous over relatively short distances and have historically had only minimal economic benefit. Thus, the perched aquifer does not meet the criteria of an "aquifer" for HRS purposes. These perched zones are typically found between approximately 25 and 45 ft bgs (i.e., between the surface and the top of the Gaspur aquifer) (DWR, 1961; DWR, 2004).

For the purposes of this SI, the Gaspur aquifer beneath the site is defined as being between 55 and 75 ft bgs. Water-bearing units identified at shallower depths are defined as being associated with one or more perched (or semiperched) aquifers. The Exposition aquifer is defined as being between 75 and 170 ft bgs; however, the base of this aquifer is considered approximate because no information was found regarding site-specific lithology below approximately 120 ft bgs. These designations were assigned primarily based on CPT lithological profile reports that were developed both during and prior to the completion of the SI investigation. A more comprehensive study of the lithological sediments in the 75 to 100 ft bgs zone beneath the site would be required to ascertain whether the water-bearing zones in this range are most appropriately associated with the hydrogeologic conditions of the Gaspur or Exposition aquifers. The CPT Lithological Profile Reports developed during the QualaWash SI investigation are presented in Appendix E.

Throughout much of the subbasin, the Pleistocene-age aquifers are under confined conditions due to the presence of fine-grained, low-permeability interbedded sediments. Although these fine-grained sediments, or aquicludes, generally restrict the downward migration of groundwater from overlying aquifers, semipermeable zones within the aquicludes allow aquifers to be interconnected in some areas. In addition, hydrogeologic modeling of multi-aquifer systems similar to those found in the Central Basin Pressure Area, indicates that groundwater wells screened across multiple aquifers (or wells with improperly constructed annular seals that cross multiple aquifers) can act as a direct pathway for the migration of significant volumes of shallow groundwater into deep confined aquifers when vertical hydraulic head variations create a downward hydraulic gradient. The process of this downward migration is increased in areas where the deeper aquifers have periods of high-volume pumping such as seasonal demand. Furthermore, additional studies have shown that liquids that are denser than water (i.e., dense non-aqueous phase

liquids such as TCE and PCE) can migrate downward through a multi-aquifer well even when vertical hydraulic head variations create an upward hydraulic gradient. As of the end of the 2012-2013 fiscal year, there were 537 known extraction wells (306 active and 231 inactive) within the subbasin (AwwaRF, 2006; DWR, 1961; DWR, 2013; Johnson et al., 2011).

The State of California, Department of Water Resources' Bulletin No. 104 (*Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*) – Appendix A presents "idealized" geologic cross-sections transecting the Central Subbasin. These cross-sections indicate apparent areas of merged aquifers near the site, including approximately 0.75 mile west (Gaspur-Exposition), approximately 0.22 mile west-southwest (Exposition-Gage), and approximately 0.55 mile east-southeast (Lynwood-Silverado). Aquifer interconnection within 2 miles of the site has been documented between the Gaspur through Gage and between the Lynwood through Silverado. Aquifer interconnections within 2 miles of the site have been established neither between the Gage through Jefferson, the Jefferson and Lynwood, nor the Silverado and Sunnyside (DWR, 1961).

The regional groundwater flow direction within the subbasin, which was calculated using data from wells screened within the upper San Pedro Formation (Lynwood and Silverado aquifers), is generally to the southwest with local and temporal variations from approximately west-southwest to southeast. Based upon data collected between 2007 and 2016, flow within these deeper aquifers near the site trended towards the west-southwest with temporal variations from west to south-southwest (WRD, 2017).

The groundwater flow direction within the perched aquifer at the site is not known. Because of the highly irregular and discontinuous nature of these perched water-bearing zones, the flow direction is estimated to be highly variable and the calculation of a meaningful flow direction would likely require a separate and specialized investigation.

The groundwater flow direction within the Gaspur aquifer at the site is also not known. Monitoring wells screened within the Gaspur aquifer at the Brenntag Pacific, Inc. (Brenntag) facility, which is located approximately 0.45 mile west of the QualaWash site, were measured during semiannual sampling events conducted between approximately 2010 and 2016. Calculations based on these measurements were generally inconsistent and often resulted in conflicting flow directions. Based on this information, the flow directions within the Gaspur aquifer at the QualaWash site are expected to be similarly variable and flow directions calculated on nearby properties should not be extrapolated to the site (ARCADIS, 2017).

The groundwater flow direction within the Exposition aquifer at the site is estimated to be towards the southwest. This estimated flow direction is based on monitoring well depth-to-water measurements collected from wells screened within the Exposition aquifer at the Brenntag facility between approximately 2010 and 2016 (ARCADIS, 2017).

During the SI investigation, the subsurface geology at the site was logged to a depth of 15 ft bgs, the base of continuous coring. Subsurface materials primarily consisted of light- to dark-brown sands through clayey sands with interbedded lenses (typically less than 2 ft) of dark-brown sandy

silts through clays. The lithological identifications are described in the sample log book (Appendix I). Additionally, during the SI investigation, CPT technology was used to estimate the subsurface lithology to a total depth of approximately 120 ft bgs. The interpreted Soil Behavior Type generated from the CPT generally indicated sand units from 31 to 40 ft bgs, 59 to 68 ft bgs, 78 to 88 ft bgs, and 105 to 119 ft bgs. Between these sand units, the soils were generally composed of silts and clays with thin (i.e., less than 2 ft) interbedded lens of coarser-grained materials. The CPT Lithological Profile Reports are presented in Appendix E.

4.2.2 Groundwater Targets

The nearest HRS-eligible drinking water well to the site is Well 03. This well is operated by the Tract 349 Mutual Water Company (MWC) and is located approximately 0.44 mile to the northwest of the site. Routine water quality sampling of this well has not reported elevated concentrations of AOCs, including TCE, PCE, arsenic, or chromium. Well 03 is a multi-aquifer well with six distinct screening intervals that correlate to the estimated depths of the Silverado and Sunnyside aquifers (BBD, 1948; DWR, 1961; RWQCB, 2015; Weston, 2016).

The GSWC - Bell/Bell Gardens system's Hoffman Well 02 was a public supply well located approximately 200 ft east of the northern portion of the site, which was removed from service in approximately 2000 and subsequently destroyed in approximately 2007 due primarily to elevated concentrations of chromium. The maximum reported chromium concentration of 333 µg/L was identified in November 2000. This well had consistently exhibited detectable, but relatively low, concentrations of PCE since at least 1985 and had exhibited elevated TCE concentrations since at least 1985. PCE concentrations gradually began increasing in approximately 1990. The maximum reported PCE concentration of 5.7 µg/L was identified in November 2000. The maximum reported TCE concentration of 15.3 µg/L was identified in November 1996. Hoffman Well 02 was a single-aquifer well with three distinct screening intervals (437 to 444, 454 to 476, and 477 to 494 ft bgs) that correlated to the estimated depths of the Lynwood aquifer (DWR, 1961; RWQCB, 2015; Weston, 2016; Appendix C-2).

The City of South Gate's Well 7 was a public supply well located approximately 0.30 mile southwest of the site, which was removed from service in approximately 2002 and destroyed in approximately 2011 due primarily to elevated concentrations of arsenic, chromium (including hexavalent chromium), and TCE. The maximum reported arsenic concentration of 15.1 µg/L was identified in December 1997. The maximum reported chromium concentration (primarily of the hexavalent species) of 86 µg/L was identified in August 2000. This well had exhibited elevated PCE and TCE concentrations since at least 1985. The maximum reported PCE concentration of 3.8 µg/L and TCE concentration of 14 µg/L were both identified during the most recent recorded sampling in October 2001. Well 7 was a single-aquifer well with a sole screening interval that correlated to the estimated depths of the Lynwood aquifer (DWR, 1948; DWR, 1961; RWQCB, 2015; Weston, 2016; Appendix C-3).

The Fed MCL for arsenic is 10 µg/L, for chromium is 100 µg/L, for PCE is 5.0 µg/L, and for TCE is 5.0 µg/L.

There are 82 known active drinking water wells, 4 known maintained-standby wells, and 31 known inactive (i.e., inactive, destroyed, or abandoned) wells located within the target distance limit (TDL) (i.e., 4 miles of established on-site sources). Water purveyors known to operate wells within the TDL include Tract 349 MWC, City of South Gate, GSWC – Bell/Bell Gardens, City of Huntington Park, Tract 180 MWC, City of Downey, Rancho Los Amigos Hospital, Maywood MWC No. 3, City of Bell Gardens, Maywood MWC No. 1, City of Lynwood, GSWC – Hollydale, Maywood MWC No. 2, City of Commerce, City of Vernon, CalWater Service – East Los Angeles (ELA), Walnut Park MWC, City of Compton, GSWC – Florence/Graham, Lynwood Park MWC, and Park Water Company (PWC) (Liberty) – Bellflower/Norwalk. Additional service information for these purveyors is presented in Table 5 (Weston, 2016).

4.2.3 Groundwater Pathway Conclusion *(See Figures 4 & 5; Tables 3 through 5)*

A release of hazardous substances from the site to groundwater has not been established. For HRS purposes, a release to groundwater is established when a hazardous substance is detected in a hydraulically downgradient well at a concentration significantly above background levels, and some portion of the release is attributable to the site. A hazardous substance is considered to be present at a concentration significantly above background levels when one of the following two criteria is met: (1) the hazardous substance is detected in the contaminated (i.e., release) sample, when not detected in the background samples or (2) the hazardous substance is detected in the release sample at a concentration equal to or greater than three times the maximum background level, when detected in the background samples.

Release samples collected during the QualaWash 2015 SI sampling event from within the Gaspur aquifer exhibited concentrations of arsenic and manganese that exceeded documented federal and/or state regulatory benchmarks (i.e., Fed MCL, CA 2nd MCL). However, since an on-site hazardous substance source has not been documented, and since the hydraulic gradient of the Gaspur aquifer beneath the site has not been adequately defined, appropriate background concentrations for these analytes could not be assigned and a release to the Gaspur aquifer cannot be established.

Release samples collected during the QualaWash 2015 SI sampling event from within the Exposition aquifer did not exhibit concentrations of metals or VOCs that exceeded documented federal and/or state regulatory benchmarks. In addition, since an on-site hazardous substance source has not been documented, it was deemed unnecessary for HRS purposes to assign an Exposition aquifer background sample location (see section 3.2.1). Based on this information, a release to the Exposition aquifer cannot be established.

The geologic materials between the ground surface at the site and the top of the deepest identified aquifer, the Sunnyside, are generally characterized by confined aquifer systems, which are composed of relatively permeable sands through gravels and are separated by relatively impermeable clay through silt layers, although semipermeable zones within these layers allow one or more aquifers to be interconnected in some areas. The estimated elevations and depths of the aquifers underlying the site are presented in Table 4. There are 82 known active drinking water wells within 4 miles of the site. These wells, which are operated by 21 distinct water purveyors,

serve an apportioned population of approximately 576,000 (CTE, 2011; CWS, 2016; DWR, 1961; KJC, 2016a; KJC, 2016b; MWM, 2016; RMP, 2011; SAA, 2011; SEI, 2012; SWRCB, 2017; Weston, 2016).

4.3 Surface Water Pathway

To determine the score for the surface water pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to surface water (e.g., streams, rivers, lakes, and oceans); 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, persistence, bioaccumulation potential, and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on drinking water intakes, fisheries, and sensitive environments associated with surface water bodies within 15 miles downstream of the site.

Surface water runoff from the QualaWash site is expected to flow from the paved surfaces at the site via engineered concrete troughs into the adjacent municipal stormwater system. The nearest surface water body to the site is the Los Angeles River, which is located approximately one-third mile east of the site. The Los Angeles River is highly modified, having been lined with concrete along most of its length by the U.S. Army Corps of Engineers in the 1950s. Flows in the river are dominated by urban runoff and tertiary-treated effluent from several municipal wastewater treatment plants. The river empties into the Pacific Ocean at San Pedro Bay approximately 13.5 miles downstream of the site. There are no surface water intakes, fisheries, or sensitive environments associated with the Los Angeles River downstream of the site; however, there is a potential for fisheries and/or recreational areas to exist within San Pedro Bay (Google, 2017; RWQCB, 1994).

4.4 Soil Exposure and Air Migration Pathways

In determining the score for the soil exposure pathway, the HRS evaluates: 1) the likelihood that there is surficial contamination associated with the site (e.g., contaminated soil that is not covered by pavement or at least 2 feet of clean soil); 2) the characteristics of the hazardous substances in the surficial contamination (i.e., toxicity and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, exposed to the contamination. For the targets component of the evaluation, the HRS focuses on populations that are regularly and currently present on or within 200 feet of surficial contamination. The four populations that receive the most weight are residents, students, daycare attendees, and terrestrial sensitive environments.

In determining the score for the air migration pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to ambient outdoor air; 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on regularly occupied residences, schools, and workplaces

within 4 miles of the site. Transient populations, such as customers and travelers passing through the area, are not counted.

There are no known residences, schools, daycare facilities, or sensitive environments on site. In addition, the site is fenced and, with the exception of a few minor landscaped areas, its surface is covered with pavement or buildings. The site is bordered to the north by approximately nine single- and multi-family residential properties. There are regularly occupied workplaces on site; however, the total current number of employees is not known (Google, 2017; Appendix B).

4.5 Hazard Ranking System Summary *(See Figures 4 & 5; Tables 3 through 5)*

On-site soil-matrix samples collected during the 2015 SI investigation did not exhibit concentrations of metals or VOCs that exceeded assigned site-specific action levels.

Groundwater release samples collected from both the Gaspur and Exposition aquifers during the investigation exhibited concentrations of metals, specifically arsenic and manganese, that exceeded documented federal and/or state regulatory benchmarks. However, groundwater action levels were not assigned for HRS purposes in either aquifer since an on-site source was not documented (see Section 3.2.1).

The following primary HRS factors are associated with the site:

- Hazardous substance sources at the site have not been documented based on the results of the 2015 SI investigation. Consequently, a release of hazardous substances from the site to groundwater cannot be established.

- Aquifer interconnection within 2 miles of the site has not been adequately documented between the Exposition through Silverado aquifers.

- The geologic materials between the site surface and the top of the Silverado aquifer are generally characterized by approximately 550 ft of relatively permeable sands and gravels and approximately 500 ft of less permeable clays and silts.

- The nearest drinking water well is located between one-quarter mile and one-half mile from the site.

- Drinking water wells within 4 miles of the site serve an apportioned population of approximately 576,000.

The following secondary HRS factors are associated with the site:

- No drinking water intakes are associated with surface water within 15 miles downstream of the site. However, there is the potential for fisheries and/or sensitive environments associated with the Pacific Ocean to exist within this target distance limit.

- There are no known residences, schools, daycare centers, or sensitive environments on site. The site is bordered to the north by approximately nine residential properties.

- There are regularly occupied workplaces on site; however, the total number of employees is not known.

- The site is fenced and is generally inaccessible to the public.

- With the exception of minor landscaped areas, the surface of the site is covered with pavement or buildings.

5.0 REMOVAL EVALUATION CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415 (b) (2)] authorizes EPA to consider emergency response actions at those sites that pose an imminent threat to human health or the environment. For the following reasons, a referral to Region 9's Emergency Response Office does not appear to be necessary (Google, 2017; Appendix B):

- The site is fenced and generally inaccessible to the public.

- The surface of the site is covered with pavement or buildings.

6.0 REFERENCES

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Tables

Table 1: Northern Site Source Sampling Results for Select Metals

Sample Location	Sample Depth (ft bgs)	Antimony	Arsenic	Barium	Beryllium	Cobalt	Copper	Lead	Manganese	Vanadium	Zinc
Benchmarks and Action Levels											
Residential RSL		31	0.68	15,000	160	23	3,100	400	1,800	390	23,000
MCL-based SSL		0.27	0.29	82	3.2	--	46	14	--	--	--
HRS SEP Benchmark		30	0.77	10,000	100	20	3,000	--	10,000	394	20,000
Action Level (1)		**1.0**	**7.6**	**461**	**1.8**	**33**	**87**	**19**	**1,461**	**139**	**197**
Background Samples											
QWS-DP-9	2	0.95 UJ	1.7	111	0.34 J	7.4	18	2.9	279	29	44 J
	5	0.89 UJ	1.3	79	0.27 J	5.4	9.9	2.0	204	23	33 J
	10	1.0 UJ	2.0	113	0.47 J	7.8	20	4.4	299	33	48 J
	15	0.99 UJ	1.5	113	0.36 J	8.1	16	3.5	366 J	36 J	49 J
Source Samples											
QWS-DP-1	2	0.84 UJ	2.2	132	0.43	9.0	25	3.8	383	35	51 J
	5	0.84 UJ	1.8	118	0.49	7.6	18	3.4	304	33	45 J
	10	1.2 UJ	2.7	159	0.56 J	11	29	5.4	426	42	62 J
	15	1.0 UJ	2.3	131	0.62	9.4	25	5.2	388	36	54 J
QWS-DP-4	2	1.1 UJ	1.7	128	0.44 J	8.8	22	4.9	342	33	54 J
	5 (2)	1.0 UJ	1.4	89	0.38 J	6.7	13	2.9	267	29	41 J
	10	0.91 UJ	3.2	173	0.84	12	36	7.6	532	47	63 J
	15	0.87 UJ	3.0	153	0.71	11	28	6.4	399	44	57 J
QWS-DP-5	2	0.99 UJ	2.2	137	0.46 J	9.2	27	9.0	370	36	63 J
	5	0.86 UJ	1.3	80	0.30 J	5.8	11	2.2	247	25	35 J
	10	1.1 UJ	2.4	159	0.55 J	11	26	4.4	484	43	63 J
	15	1.1 UJ	2.1	121	0.52 J	8.8	21	4.0	330	35	50 J
QWS-DP-6	2	1.1 UJ	2.9	131	0.44 J	8.9	28	12	381	36	69 J
	5	1.0 UJ	1.5	97	0.37 J	7.1	14	3.1	295 J	28 J	42 J
	10	0.99 UJ	3.1	132	0.56	9.5	27	5.4	479	39	55 J
	15	1.1 UJ	2.8	158	0.65	9.9	27	5.4	425	40	56 J

Notes: Values in Bold exceed Action Level
Values in Shaded cells exceed ten times Action Level
All results reported in milligrams per kilogram (mg/kg)
Samples collected in November, 2015
1 = Per the HRS, the action level to establish an on-site source of contaminated soil is "significantly above background," which is defined as three times the background concentration (See section 3.2.1)
2 = Duplicate Sample collected; greater result is presented

Definitions: ft bgs = feet below ground surface
HRS = Hazard Ranking System
MCL = Federal Maximum Contaminant Level
RSL = Regional Screening Level
SEP = Soil Exposure Pathway
SSL = Soil Screening level

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
J- = The result is an estimated quantity, but the result may be biased low.
R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 2: Southern Site Source Sampling Results for Select Metals

Sample Location	Sample Depth (ft bgs)	Antimony	Arsenic	Barium	Beryllium	Cobalt	Copper	Lead	Manganese	Vanadium	Zinc
Benchmarks and Action Levels											
Residential RSL		31	0.68	15,000	160	23	3,100	400	1,800	390	23,000
MCL-based SSL		0.27	0.29	82	3.2	--	46	14	--	--	--
HRS SEP Benchmark		30	0.77	10,000	100	20	3,000	--	10,000	394	20,000
Action Level (1)		**1.0**	**7.6**	**461**	**1.8**	**33**	**87**	**19**	**1,461**	**139**	**197**
Background Samples											
QWS-DP-9	2	0.95 UJ	1.7	111	0.34 J	7.4	18	2.9	279	29	44 J
	5	0.89 UJ	1.3	79	0.27 J	5.4	9.9	2.0	204	23	33 J
	10	1.0 UJ	2.0	113	0.47 J	7.8	20	4.4	299	33	48 J
	15	0.99 UJ	1.5	113	0.36 J	8.1	16	3.5	366 J	36 J	49 J
Source Samples											
QWS-DP-2	2	0.91 UJ	2.7	147	0.54	9.6	34	13	410	39	65 J
	5 (2)	1.0 UJ	1.5	93	0.34 J	6.2	12	2.3	268	27	40 J
	10	0.97 UJ	2.1	124	0.50	9.0	23	4.5	311	35	51 J
	15	0.84 UJ	2.1	128	0.52	8.8	22	4.1	331	34	50 J
QWS-DP-3	2	0.82 UJ	2.6	144	0.47	9.2	26	7.9	384	36	59 J
	5 (2)	0.91 UJ	1.9	129	0.45 J	8.8	20	3.6	390	34	51 J
	10	0.90 UJ	1.7	115	0.45	7.9	18	3.6	345	32	47 J
	15	1.1 UJ	1.7	97	0.31 J	6.8	14	2.8	275	27	44 J
QWS-DP-7	2	0.97 UJ	2.2	136	0.43 J	8.8	28	10	350	32	75 J
	5	0.79 UJ	1.7	113	0.38 J	7.5	18	4.1	318	29	50 J
	10	0.86 UJ	2.7	154	0.59	10	29	8.4	480	40	68 J
	15	0.94 UJ	2.3	131	0.45 J	9.1	23	5.5	388	35	60 J
QWS-DP-8	2	0.82 UJ	2.0	118	0.46	7.9	25	15	329	30	63 J
	5 (2)	0.94 UJ	1.4	109	0.34 J	7.4	15	2.8	280	31	43 J
	10	1.1 UJ	2.2	138	0.62	9.6	26	4.8	340	38	58 J
	15	1.1 UJ	2.1	127	0.40 J	8.5	19	3.6	333	31	51 J

Notes: Values in Bold exceed Action Level
Values in Shaded cells exceed ten times Action Level
All results reported in milligrams per kilogram (mg/kg)
Samples collected in November, 2015
1 = Per the HRS, the action level to establish an on-site source of contaminated soil is "significantly above background," which is defined as three times the background concentration (See section 3.2.1)
2 = Duplicate Sample collected; greater result is presented

Definitions: ft bgs = feet below ground surface
HRS = Hazard Ranking System
MCL = Federal Maximum Contaminant Level
RSL = Regional Screening Level
SEP = Soil Exposure Pathway
SSL = Soil Screening level

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
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R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 3: Groundwater Sampling Results for Select Metal and VOC Analytes

Sample Location	Sample Depth (ft bgs)	Antimony	Arsenic	Chromium	Lead	Manganese	Vanadium	cis-1,2- Dichloroethylene	Tetrachloroethylene	Trichloroethylene	Vinyl Chloride
		Sb	As	Cr	Pb	Mn	V	c-1,2-DCE	PCE	TCE	VC
Benchmark:		**6.0**	**10**	**100**	**15**	**50 (1)**	**50**	**70**	**5.0**	**5.0**	**2.0**
Benchmark Source:		Fed MCL	Fed MCL	Fed MCL	Fed MCL	CA 2nd MCL	CA NL	Fed MCL	Fed MCL	Fed MCL	Fed MCL
Release Sample Locations – Direct Push											
QWS-DP-2 (3)	60	NA	NA	NA	NA	NA	NA	6.1	0.50 U	3.4	0.5 U
QWS-DP-6	69	1.6 J	2.2	2.0 U	1.0 U	248	5.0 U	0.23 J	0.50 U	0.11 J	0.5 U
Release Sample Locations – Cone Penetration Testing											
QWS-CPT-4	67 (2)	1.1 J	**14**	2.0 U	1.0 U	206	2.4 J	0.50 U	0.50 U	0.50 U	0.5 U
	86	1.7 J	4.1	2.0 U	1.0 U	323	15	0.50 U	0.50 U	0.50 U	0.5 U
	114	0.64 J	1.6	2.0 U	1.0 U	136	0.84 J	0.50 U	0.50 U	0.50 U	0.5 U
QWS-CPT-5	68	0.77 J	**16**	2.0 U	0.16 J	322 J	0.77 J	2.3	0.50 U	1.5	0.5 U
	86	1.6 J	4.5	2.0 U	0.07 J	208 J	1.6 J	0.50 U	0.50 U	0.50 U	0.5 U
	116	0.64 J	1.1	2.0 U	0.04 J	110 J	0.37 J	0.50 U	0.50 U	0.50 U	0.5 U
Secondary Objective Sample Locations											
QWS-CPT-1	64	1.0 J	**27**	2.0 U	1.0 U	167	3.0 J	1.9	0.50 U	1.6	0.5 U
	90	2.7	**20**	2.0 U	1.0 U	380	6.9	0.50 U	0.50 U	0.50 U	0.5 U
	112	0.58 J	2.9	2.0 U	1.0 U	108	1.4 J	0.50 U	0.50 U	0.50 U	0.5 U
QWS-CPT-2	68	1.5 J	**10**	2.0 U	1.0 U	101	1.6 J	0.50 U	0.50 U	0.50 U	0.5 U
	88	1.2 J	4.3	2.9	2.7	345	7.4	0.50 UJ	0.50 U	0.50 U	0.5 U
	112	0.8 J	5.0	18	3.6	217	21	0.50 U	0.50 U	0.50 U	0.5 U

Notes: Values in Bold exceed Benchmark
Values in Shaded cells exceed ten times Benchmark
All results reported in micrograms per liter (µg/L)
Samples collected in November, 2015
1 = Manganese exceedances are presented as 10 times reference benchmark
2 = Duplicate Sample collected; greater result is presented
3 = Sample submitted for VOC analysis only

Definitions:
CA 2nd MCL = California Secondary Maximum Contaminant Level
CA NL = California Notification Level
Fed MCL = Federal Maximum Contaminant Level
ft bgs = feet below ground surface
NA = Not Analyzed

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
J- = The result is an estimated quantity, but the result may be biased low.
R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 4: Bulletin 104 Aquifer Elevations near Site

Aquifer	Estimated Elevation (ft amsl)		Estimated Depth (ft bgs)	
	Top	Base	Top	Base
Gaspur	75	50	30	55
Exposition	25	-65	80	170
Gage	-80	-140	185	245
Hollydale	-200	-245	305	350
Jefferson	-290	-350	395	455
Lynwood	-380	-460	485	565
Silverado	-490	-695	595	800
Sunnyside	-970	-1225	1075	1330

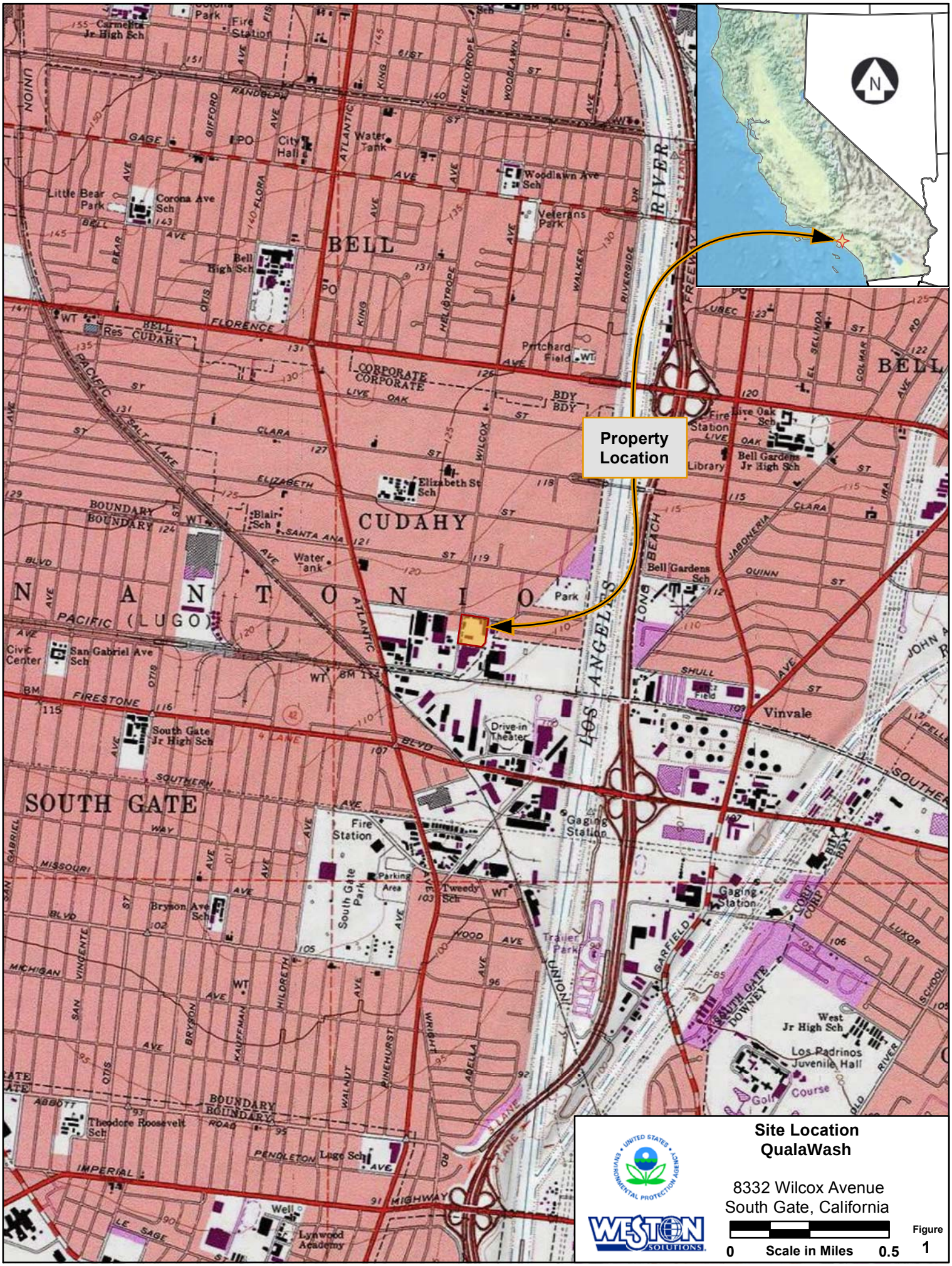
Definitions:
amsl = above mean sea level
bgs = below ground surface
ft = feet
References:
DWR, 1961

Table 5: Water Purveyors Operating Active Wells Within the Target Distance Limit

Water Company Name	No. of Wells in System (1)	Total Population Served	Percent Groundwater	No. of Wells Within 4 Miles (1)	Direction from site (approx.)
Tract 349 MWC	2	7,500	99%	2	NW
City of South Gate	7	96,057	99%	7	W-SW-S
GSWC - Bell, Bell Gardens	5	58,048	97%	5	NW-N-NE
City of Huntington Park	5	17,246	72%	5	NW
Tract 180 MWC	2	14,000	100%	2	NW
City of Downey	20	112,585	100%	17	NNE-E-SE
Rancho Los Amigos Hospital	3	8,800	100%	3	SSE
Maywood MWC #3	2	9,500	92%	2	N
City of Bell Gardens	1	11,879	100%	1	NE
Maywood MWC #1	2	3,619	95%	2	NW
City of Lynwood	5	65,965	98%	5	SW
Maywood MWC #2	2	6,700	80%	2	NNW
GSWC – Hollydale	2	7,666	100%	2	S-SSE
City of Commerce	2	3,828	100%	2	NE
City of Vernon	7	45,000	84%	5	NW
Walnut Park MWC	3	16,180	73%	3	WNW
CalWater Service – ELA	9	150,729	63%	7	N-NNE-NE
City of Compton	7	81,965	71%	3	SW
GSWC – Florence/Graham	7	65,182	82%	4	WNW
Lynwood Park MWC	3	2,300	100%	2	SW
PWC - Bellflower/Norwalk	8	71,745	15%	1	SE

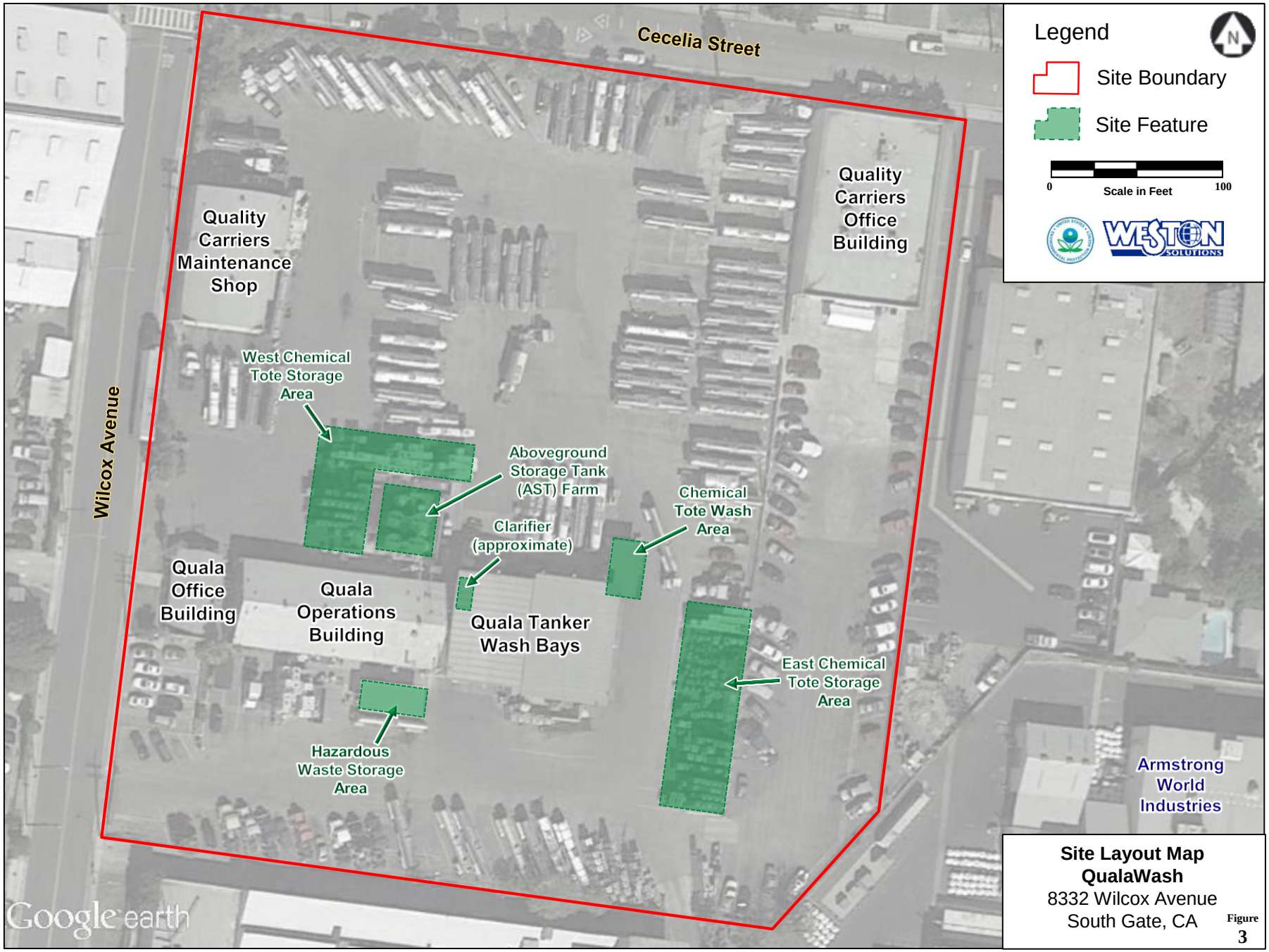
Footnotes:
1 = Does not include standby wells unless otherwise noted
References:
CTE, 2011; CWS, 2016; KJC, 2016a; KJC, 2016b; SEI, 2012; SWRCB, 2017; Weston, 2016

Figures


Property Location
BELL
CUDAHY
SOUTH GATE
Site Location
QualaWash
8332 Wilcox Avenue
South Gate, California
Scale in Miles
0
0.5
Figure
1

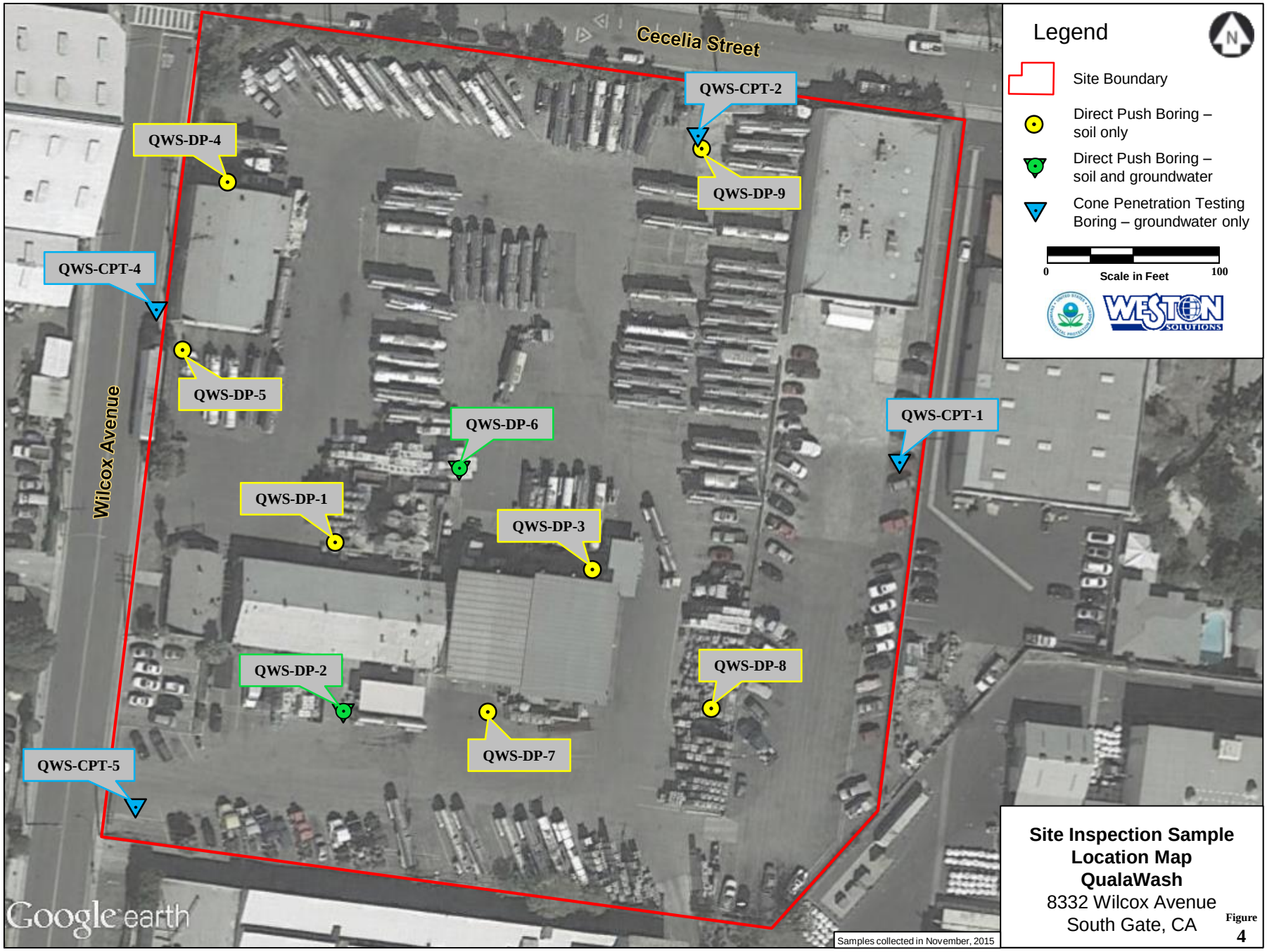
Parcel Layout Map
QualaWash
8332 Wilcox Avenue
South Gate, CA

Figure
2



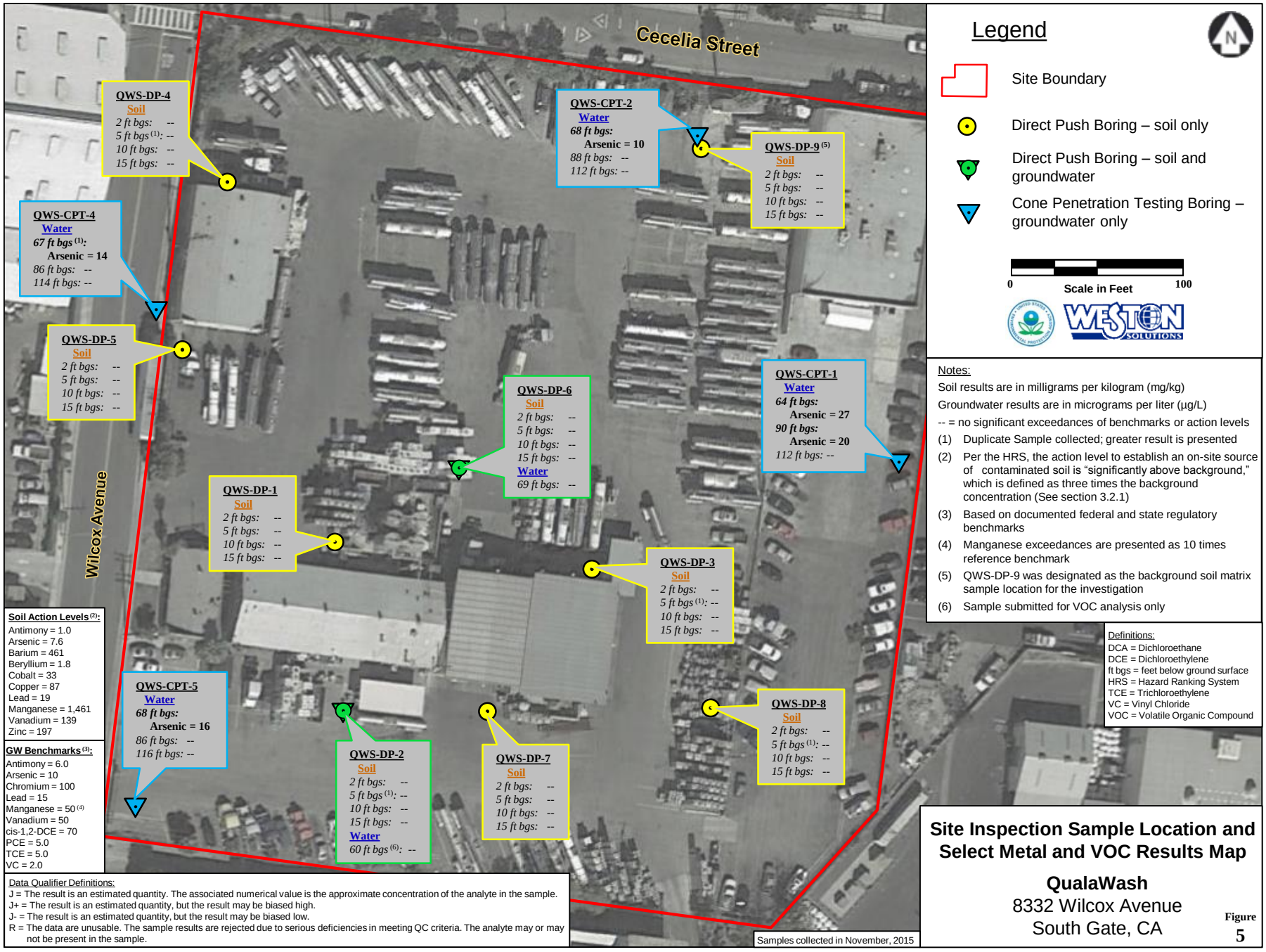
Site Layout Map
QualaWash
8332 Wilcox Avenue
South Gate, CA

Figure
3



Site Inspection Sample Location Map
QualaWash
8332 Wilcox Avenue
South Gate, CA

Figure **4**



Site Inspection Sample Location and Select Metal and VOC Results Map

QualaWash
8332 Wilcox Avenue
South Gate, CA

Figure 5

Appendices
(attached under separate cover)